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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,422	07/02/2003	Young-sun Chun	1293.1786	2563

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EXAMINER	
HUFFMAN, JULIAN D	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/611,422	CHUN, YOUNG-SUN	
	Examiner	Art Unit	
	Julian D. Huffman	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-10,12-17 and 20-23* is/are rejected.

7)☒ Claim(s) *5,11,18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6-10, 12-17 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikeda (U.S. 6,607,260 B1).

With regards to claim 1, Ikeda discloses a method of measuring image alignment errors for image formation in an ink-jet image forming apparatus having a carriage (fig. 1, abstract), the method comprising:

printing two test marks (Fig. 4, a-F, a-R) separated from each other by a designated error distance on a printing medium on which images are printed (column 14, lines 17-22, the designated/ideal error distance is 0, while the actual error distance is detected and corrected);

sensing the two test marks (column 14, lines 34-55);

measuring instants of time when the two test marks are sensed according to a movement of the carriage (column 14, lines 63-67); and

detecting an actual error distance of the two test marks using the measured instants of time and a moving speed of the carriage (column 15, lines 6-39).

With regards to claims 2 and 3, Ikeda discloses that the printing of the two test marks comprises: printing the two test marks on the printing medium using different image printing methods or different printing directions (first mark is printed in first direction which is a first printing method and second mark is printed in second direction which is a second printing method).

With regards to claim 4, Ikeda discloses that the detecting of the actual error distance comprises:

detecting a time difference between the measured instants of time of the two test marks (C1-C2, column 15, line 26, the number of clock pulses counted, C1, C2 represent the times measured and the difference is calculated); and

multiplying the detected time difference by the moving speed of the carriage to generate the actual error distance (c1-c2xtxv, where v is equal to the carriage velocity, column 15, lines 6-26).

With regards to claim 6, Ikeda discloses that the detecting of the actual error distance comprises: detecting an image alignment correction value by obtaining a distance difference between the designated error distance and the actual error distance (the distance measured represents a difference between a designated value, 0, or no offset, and an actual value).

With regards to claim 7, Ikeda discloses an apparatus for measuring image alignment errors for image formation in an image forming apparatus having a carriage (fig. 1, abstract), the apparatus comprising:

a test mark print-directing unit (fig. 3, element 15) which directs the carriage to print two test marks separated from each other by a designated error distance on a printing medium on which images are printed (controller 15 controls recording head and recording medium for printing);

a test mark sensing unit (fig. 3, element 1) which senses the two test marks and outputs a sensed result of the two test marks (column 13, lines 39-42);

a reference clock generating unit (fig. 3, element 7) which generates a reference clock and outputs the generated reference clock (column 13, lines 47-48);

a sensed instant of time measuring unit (fig. 3, counter, element 9) which compares the sensed result of the two test marks with the generated reference clock to measure instants of time when the two test marks are sensed according to a movement of the carriage, and outputs the measured instants of time (column 13, lines 48-50); and

an error distance detecting unit (fig. 3, element 13) which detects an actual error distance of the two test marks using the measured instants of time and a moving speed of the carriage, and outputs the detected actual error distance (column 13, lines 51-53 and column 15, lines 6-40).

With regards to claims 8 and 9, Ikeda discloses that the test mark print-directing unit directs the carriage to print each of the two test marks on the printing medium

using different image printing methods or in different printing directions (first mark is printed in first direction which is a first printing method and second mark is printed in second direction which is a second printing method).

With regards to claim 10, Ikeda discloses that the error distance detecting unit (fig. 3, element 13) detects a time difference between the measured instants of time of the two test marks and multiplies the detected time difference by the moving speed of the carriage to output the detected actual error distance (column 15, lines 6-26).

With regards to claim 12, Ikeda further discloses: an image alignment correction value detecting unit (fig. 3, element 13) which obtains a distance difference between the designated error distance and the actual error distance, detects an image alignment correction value from the distance difference, and outputs the detected image alignment correction value to compensate for the image alignment errors (column 15, lines 6-39).

With regards to claim 13, Ikeda discloses an apparatus for measuring an image alignment error for image formation in an image forming apparatus having a carriage (fig. 1, abstract), the apparatus comprising:

a test mark print-directing unit (fig. 3, element 15) which prints two test marks on a printing medium according to a designated error distance (controller controls print head and recording medium for printing); and

an error distance detecting unit (fig. 1, element 13) which detects an actual error distance of the first and second test marks to compensate for the image alignment

error according to the detected actual error distance and the designated error distance (column 13, lines 51-53 and column 15, lines 6-40).

With regards to claim 14, Ikeda discloses an apparatus for measuring an image alignment error for image formation in an image forming apparatus having a carriage (fig. 1, abstract), the apparatus comprising:

a test mark print-directing unit (fig. 3, element 15) which directs the carriage to print first and second test marks on a printing medium according to a designated error distance (controller controls print head and recording medium for printing);

a test mark sensing unit (fig. 3, element 1) which senses the first and second test marks and outputs first and second sensed results of the first and second test marks (column 13, lines 39-42);

a sensed instant of time measuring unit (fig. 3, element 7) which measures instants of time when the first and second test marks are sensed, according to the first and second sensed results, and outputs the measured instants of time (column 13, lines 48-50; and

an error distance detecting unit (fig. 3, element 13) which detects an actual error distance of the first and second test marks using the measured instants of time to compensate for the image alignment error according to the detected actual error distance of the first and second test marks (column 13, lines 51-53 and column 15, lines 6-40).

With regards to claim 15, Ikeda discloses a reference clock generating unit (fig. 3, element 7) which generates a reference clock, wherein the sensed instant of time measuring unit generates the measured instants of time according to the sensed result of the first and second test marks and the generated reference clock (column 13, lines 47-48).

With regards to claim 16, Ikeda discloses that the carriage moves at a moving speed to print the first and second test marks, and the error distance detecting unit generates the actual error distance of the first and second test marks using the measured instants of time and the moving speed of the carriage (column 15, line 26).

With regards to claim 17, Ikeda discloses that the moving speed of the carriage is constant during printing the first and second test marks, and the error distance detecting unit multiplies a time difference between the measured instants of time by the constant moving speed of the carriage to generate the actual error distance (column 15, line 26).

With regards to claim 20, Ikeda discloses that the carriage moves in a first direction, the printing medium moves in a second direction, and the first and second test marks are printed in one of the first and second directions (fig. 1).

With regards to claim 21, Ikeda discloses that the carriage moves with respect to the printing medium to print an image in another printing direction according to a difference between the actual error distance and the designated error distance (column 15, lines 31-39).

With regards to claim 22, Ikeda discloses a method of measuring an image alignment error for image formation in an image forming apparatus having a carriage (fig. 1, abstract), the method comprising:

printing two test marks (Fig. 4, a-F, a-R) on a printing medium according to a designated error distance; and

detecting an actual error distance of the first and second test marks to compensate for the image alignment error according to the detected actual error distance and the designated error distance (column 15, lines 6-39).

With regards to claim 23, Ikeda discloses a method of measuring an image alignment error for image formation in an image forming apparatus having a carriage, the method comprising:

directing the carriage to print first and second test marks (Fig. 4, a-F, a-R) on a printing medium according to a designated error distance;

sensing the first and second test marks to output first and second sensed results of the first and second test marks (column 14, lines 44-46);

measuring instants of time when the first and second test marks are sensed, according to the first and second sensed results to output the measured instants of time (column 14, lines 56-67); and

detecting an actual error distance of the first and second test marks using the measured instants of time to compensate for the image alignment error according to the detected actual error distance of the first and second test marks (column 15, lines 6-39).

Response to Arguments

3. Applicant's arguments filed 14 February 2005 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., sensing only two marks) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's argument that Ikeda does not disclose a test mark print-directing unit which prints two test marks on a printing medium according to a designated error distance is noted, however, this argument is respectfully not deemed persuasive since the claim language does not preclude an error value of 0, which is the value used in Ikeda. Ikeda attempts to print aligned test marks with an error value of 0 and thereafter senses an inadvertant error between the test marks.

Allowable Subject Matter

4. Claims 5, 11, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 9:30a.m.-6:00p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JH
26 April 2005

K. FEGGINS
PRIMARY EXAMINER